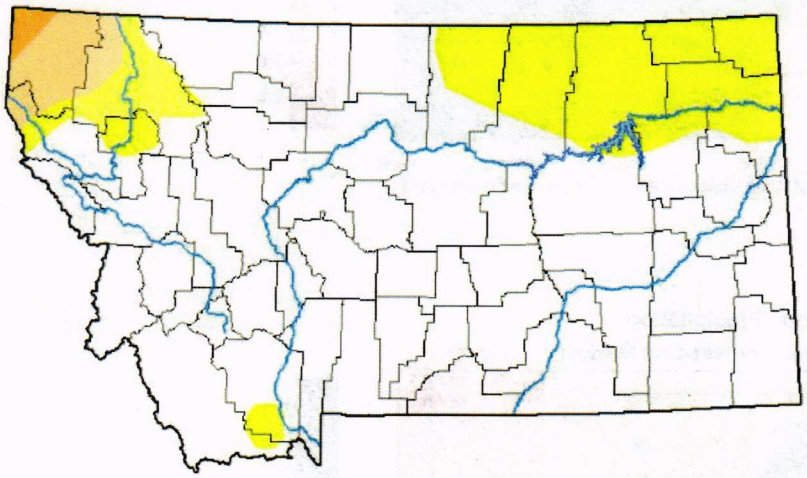
Montana Drought Status
June 27, 2019

Areas to Watch for Drought:

- **NW Montana** (Lincoln, Sanders, Flathead, Lake Counties)
- **NE Montana** (Blaine, Phillips, Valley, Daniels, Sheridan, Roosevelt, McCone, Richland Counties)
- **SW Montana** (Beaverhead and Madison Counties)



Map released: Thurs. June 27, 2019

Data valid: June 25, 2019 at 8 a.m. EDT

Intensity:

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

Update from last week: Removal of D1 in NE MT due to recent precipitation. Lincoln County downgraded to D2. Dryness in the NW goes back 36 months or more whereas other areas of the state are at normal or above during the same period.

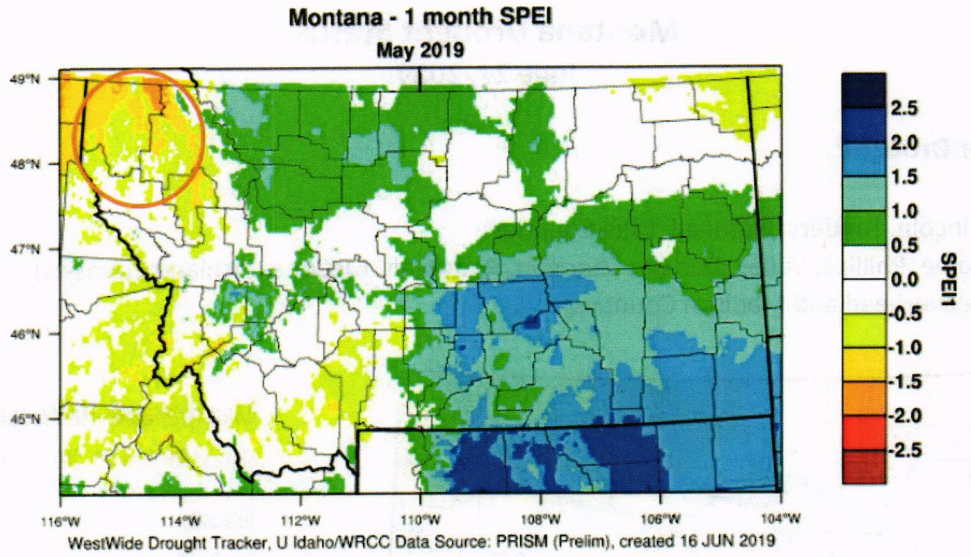
Who Monitors Drought in Montana?

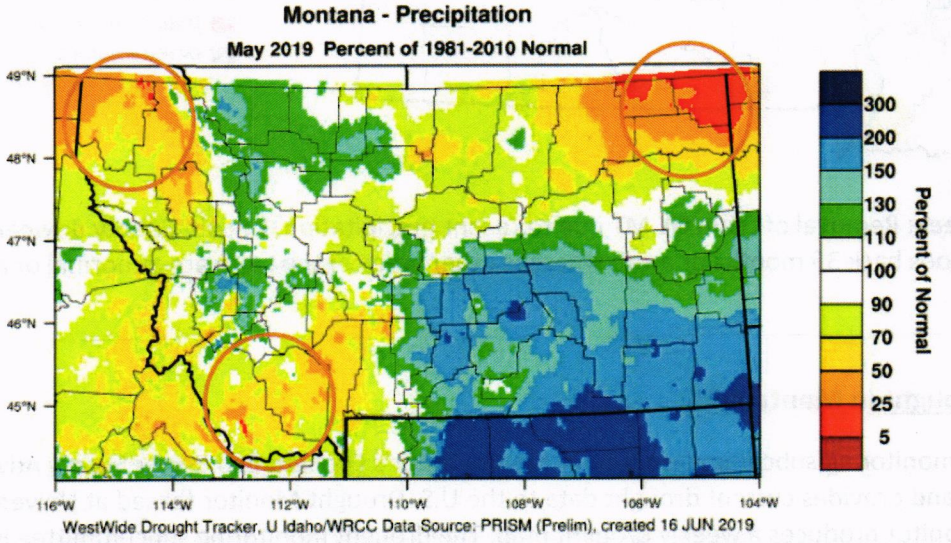
Montana's drought monitoring subcommittee (under the Governor's Drought and Water Supply Advisory Committee) coordinates weekly and provides current drought data to the U.S. Drought Monitor (based at University of NE, Lincoln). The U.S. Drought Monitor produces a weekly drought map. The drought monitoring subcommittee includes Montana-based representatives from:

- Montana Department of Natural Resources and Conservation (DNRC)
- Montana Department of Fish Wildlife & Parks (FWP)
- Montana Bureau of Mines and Geology (MBMG)
- Fort Belknap Tribe
- Montana Department of Agriculture
- Montana Disaster and Emergency Services (DES)
- Montana State Library
- MT Association of Counties (MACO)
- MT Climate Office
- U.S. Geological Survey (USGS)
- National Oceanic and Atmospheric Administration (NOAA)
- National Weather Service (NWS)
- Farm Services Agency (FSA)
- National Agricultural Statistics Service (NASS)

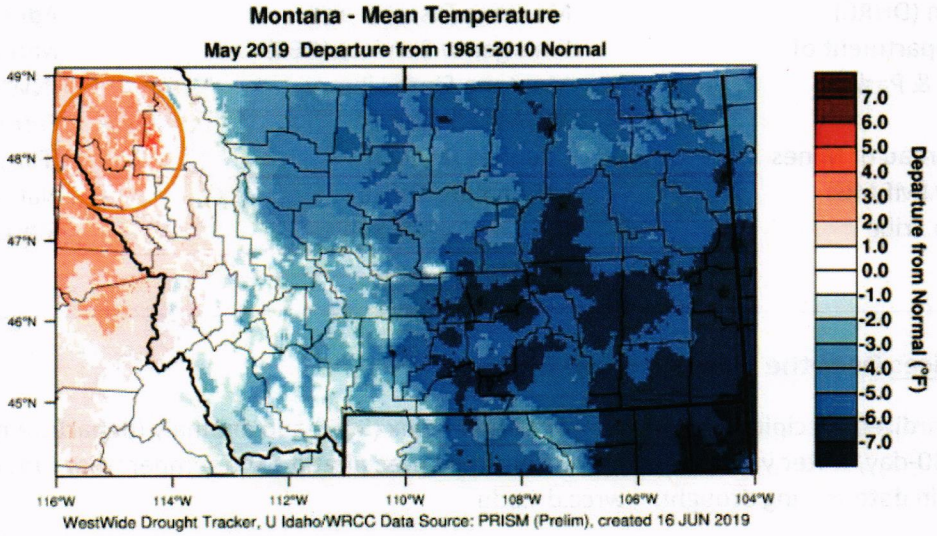
What Drought Indices Does the Subcommittee Monitor?

Precipitation: Standardized Precipitation Evapotranspiration Index (SPEI) and anomaly (departure from normal) at various timescales (30-day, water year, annual). SPEI considers precipitation and temperature (affecting potential evapotranspiration) in determining drought. – wrcc.dri.edu

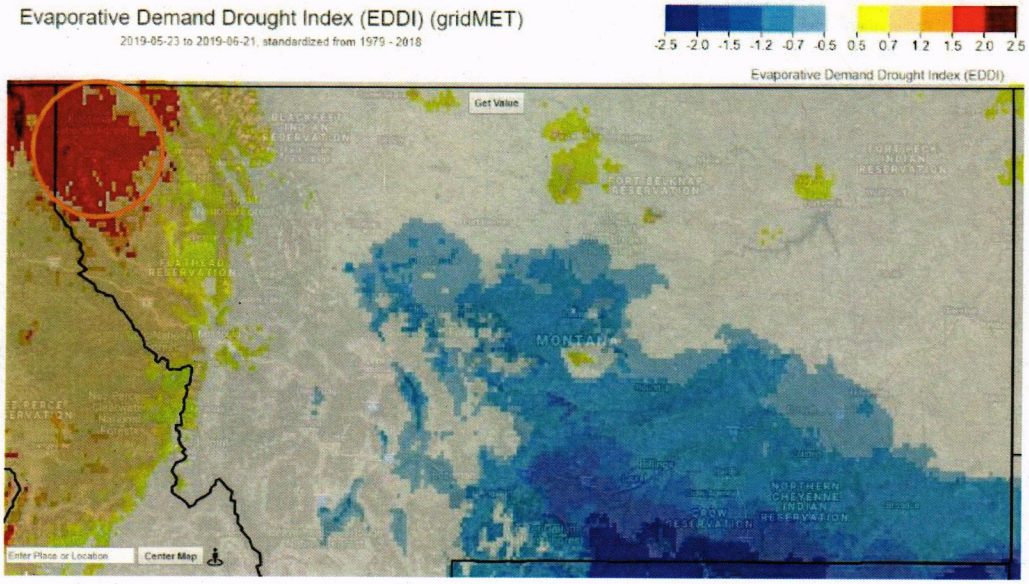




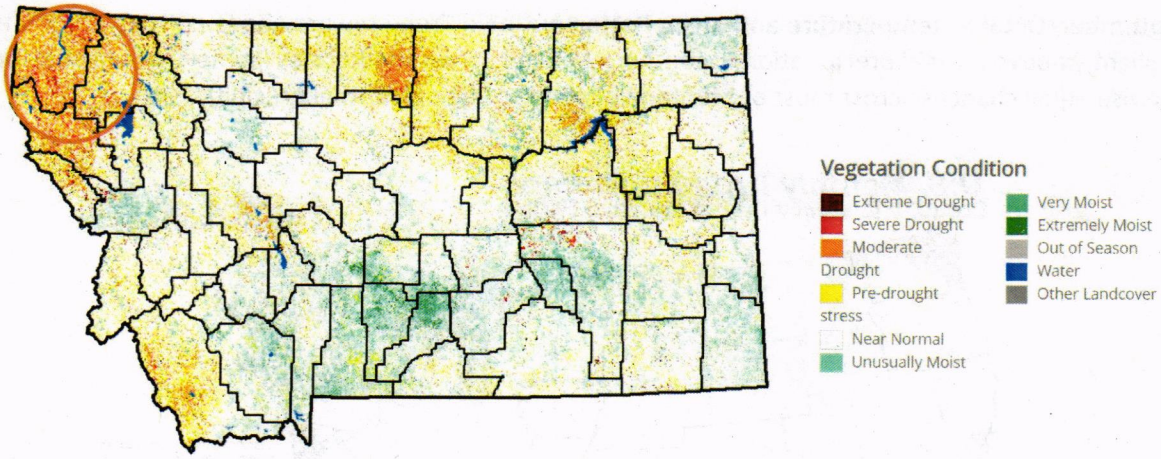
Temperature: Anomaly (departure from normal) over monthly and annual timescales. - wrcc.dri.edu



Atmospheric water demand: The Evaporative Demand Drought Index (EDDI) is an early warning tool that examines anomalies in evaporative demand "atmospheric thirst," driven by temperature, humidity, wind speed and sunshine. Allows for early warning of "flash drought." Climateengine.org/drought



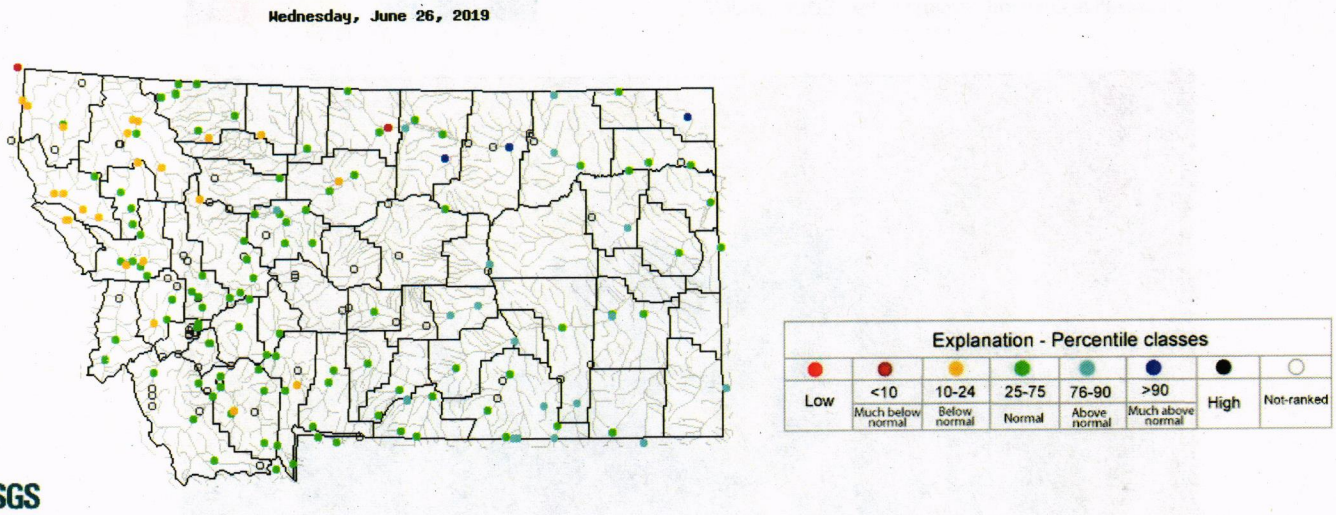
Vegetative moisture: Vegetative Drought Response Index (VegDRI) depicts vegetative stress in both crops and rangeland as plants respond to solar energy, soil moisture and other factors (1km spatial resolution) - vegdri.unl.edu



Soil moisture: emc.ncep.noaa.gov/mmb/nldas/drought
Snowpack: nrcs.usda.gov
State drought impact reports: drought.mt.gov

Sheridan County, June 10: *"We have had .6 of rain in May and June. Frost in all weeks of May. Our crested and brome is headed out at less than 6 inches tall. The dry land alfalfa has lost its bottom leaves. So, hay will be short this year."*

Streamflow: waterwatch.usgs.gov



Seasonal drought outlook: cpc.ncep.noaa.gov
Climate outlooks that incorporate large scale patterns that might develop based on ocean temperatures and atmospheric circulation patterns.

August/September/October temperature and precipitation outlook: Trend toward above normal temperatures. Potentially slightly above normal precipitation in southern MT and across the Rockies (somewhat unusual for this time of year), otherwise equal chances across most of Montana of above or below normal precipitation.